
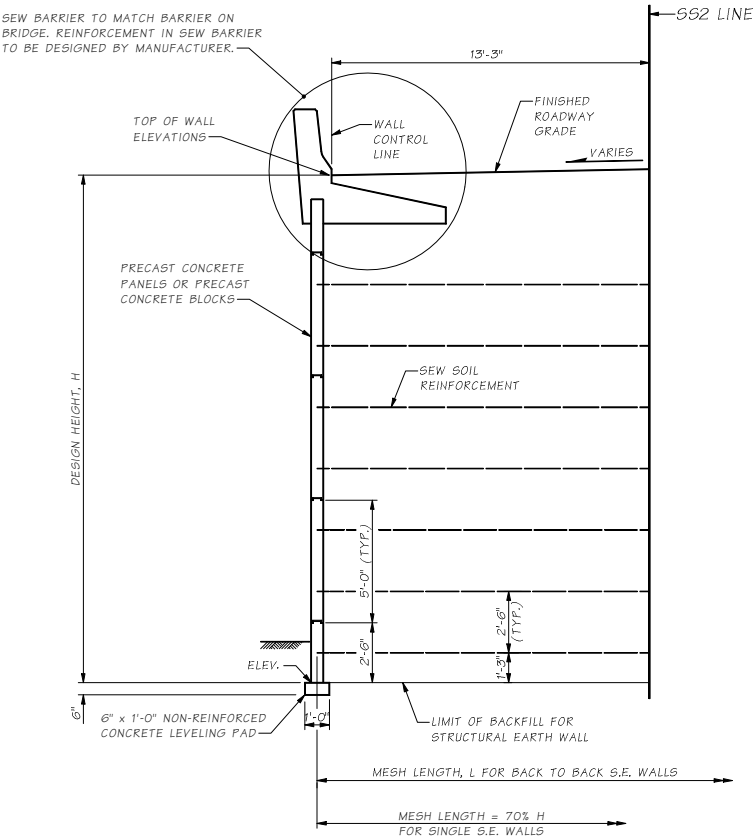


DEVELOPED ELEVATION

SR JOB NO. SHEET 8.1-A2-1

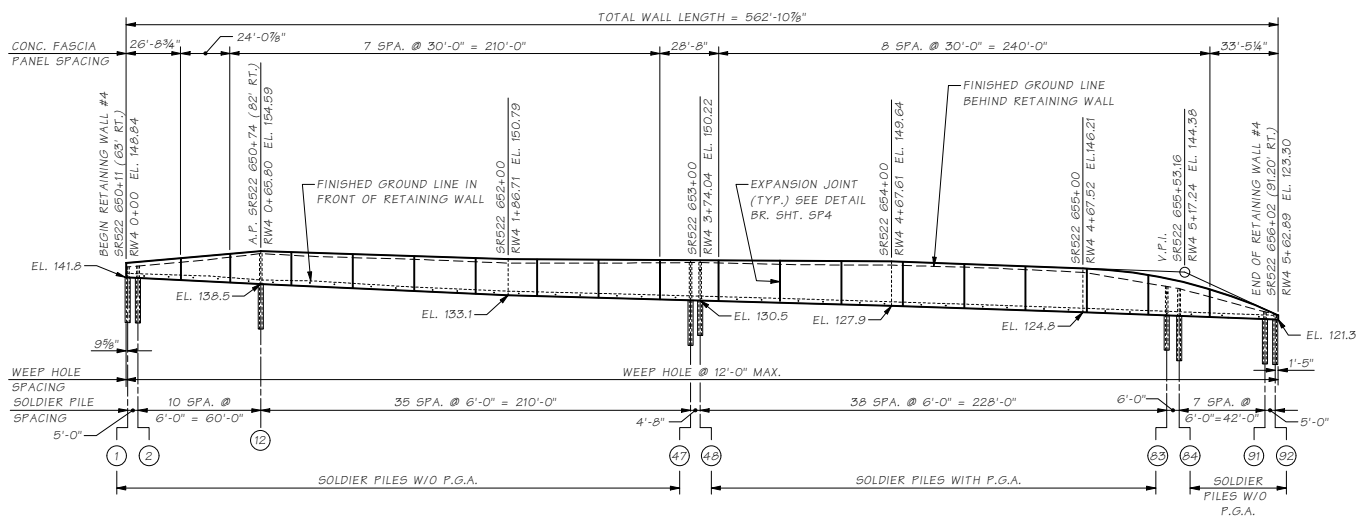
Bridge Design Engr.		M:\STANDARD\GWall\1MSE ELEV.MAN		BOOK NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	BRIDGE AND STRUCTURES OFFICE		SEW WALL ELEVATION	REVISION SHEET NO.
Supervisor				10	WASH.							SHEET
Designed By												OF
Checked By												SHEETS
Bridge Projects Engr.												
Prelim Plan By												
Architect/Specialet	DATE	REVISION	BY	APPD								



TYPICAL CROSS SECTION

SR JOB NO. SHEET 8.1-A2-2

Bridge Design Engr.		M:\1STANDARD\SIWall\1MSE_SECTION.MAN																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
---------------------	--	--------------------------------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--



REFLECTED DEVELOPED ELEVATION
A.P. = ANGLE POINT

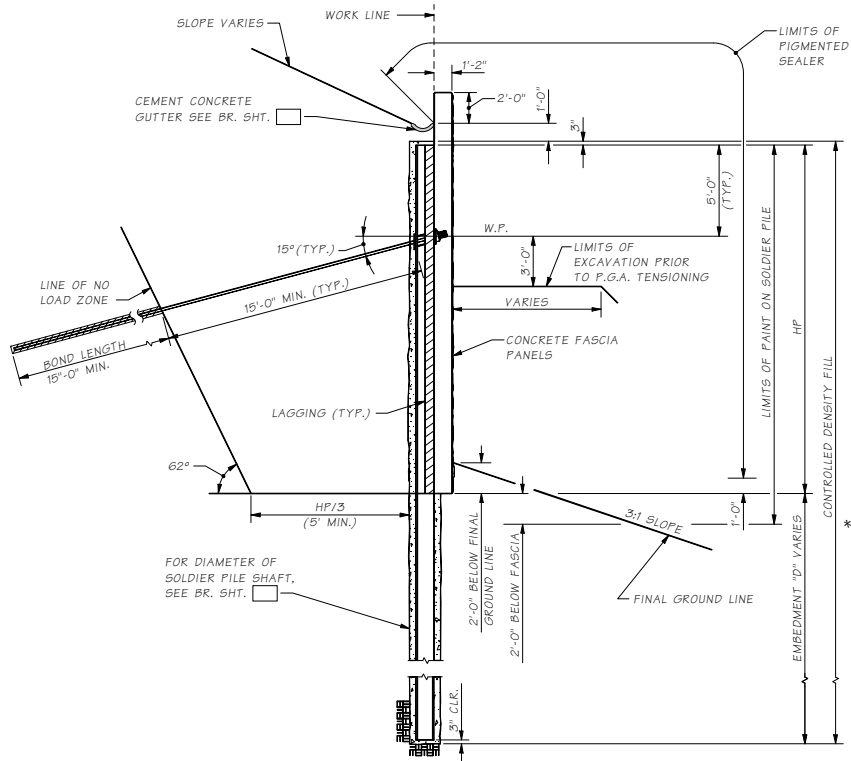
GENERAL NOTES

1. ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION-ENGLISH, DATED 2004, AND AMENDMENTS.
2. THIS STRUCTURE HAS BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES SIXTEENTH EDITION - 1996 AND INTERIMS. ALL STRUCTURAL ELEMENTS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS FOR LOAD FACTOR DESIGN.
3. SOLDIER PILE SHAFTS WITH PERMANENT GROUND ANCHORS SHALL BE FILLED WITH CONCRETE CLASS 4000P BELOW THE TIMBER LAGGING. THE REMAINING PORTION OF THE SOLDIER PILE SHAFTS, INCLUDING THE FULL HEIGHT OF SOLDIER PILE SHAFTS WITHOUT PERMANENT GROUND ANCHORS, SHALL BE FILLED WITH CONTROLLED DENSITY FILL (CDF).
4. UNLESS OTHERWISE SHOWN IN THE PLANS, THE CONCRETE COVER MEASURED FROM THE FACE OF THE CONCRETE TO THE FACE OF ANY REINFORCING STEEL SHALL BE 1 1/2".
5. SOLDIER PILES, BARS AND PLATES FOR THE SOLDIER PILE ASSEMBLY STIFFENERS AND TIE PLATES SHALL CONFORM TO ASTM A36. THE 8"Ø EXTRA STRONG PIPE SHALL CONFORM TO THE REQUIREMENTS OF ASTM A53 GR. B OR A501.
6. ALL WELDING SHALL BE DONE TO MINIMIZE DISTORTION. THE WELDING SEQUENCES AND PROCEDURES TO BE USED SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO THE START OF WELDING.
7. ALL DIMENSIONS ARE HORIZONTAL AND VERTICAL UNLESS OTHERWISE SHOWN.
8. ALL DIMENSIONS SHOWN WITH DECIMALS ARE IN METERS AND ALL DIMENSIONS SHOWN WITHOUT DECIMALS ARE IN MILLIMETERS.

SOLDIER PILE/TIEBACK WALL

Bridge Design Engr.		M:\STANDARD\GWall\B\SOLDIER TIEBACK ELEV.MAN		BOOK NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS	BRIDGE AND STRUCTURES OFFICE		SOLDIER PILE/TIEBACK WALL ELEVATION	DESIGN SHEET NO.
Supervisor				10	WASH.							SHEET
Designed By												OF
Checked By												SHEETS
Bridge Projects Engr.												
Prelim Plan By												
Architect/Specialist												
DATE		REVISION		BY	APPROD							

SR JOB NO. SHEET 8.1-A3-1

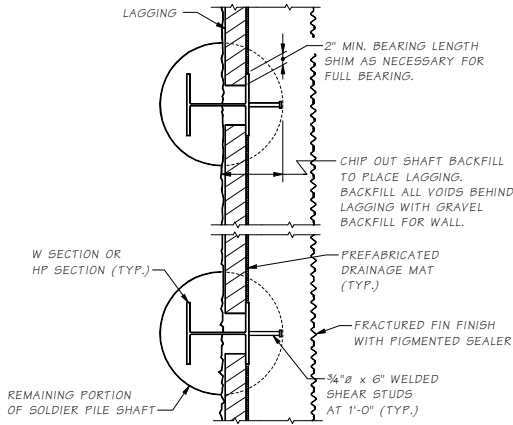


TYPICAL SECTION

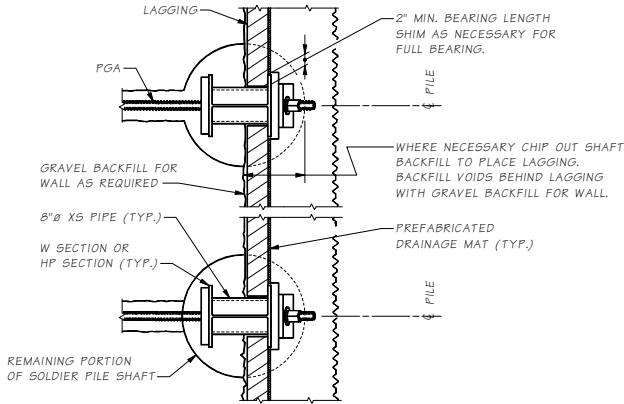
SHOWN FOR SOLDIER PILE WITH P.G.A.
SIMILAR FOR SOLDIER PILE WITHOUT P.G.A.
P.G.A.= PERMANENT GROUND ANCHOR
LAGGING SYSTEM SHALL BE DESIGNED BY THE
CONTRACTOR AND SUBMITTED TO THE ENGINEER
FOR APPROVAL. THE SOIL TYPE FOR TIMBER
LAGGING IS ____.

* USE CONTROL DENSITY FILL WHEN PLACED
IN THE DRY. USE LEAN PUMPABLE CONCRETE
WHEN PLACED IN THE WET.

LAGGING IN SERVICE
LESS THAN 36 MONTHS



PLAN - SOLDIER PILE
WALL WITHOUT P. G. A.



PLAN - SOLDIER PILE
WALL WITH P. G. A.

SR JOB NO. SHEET
8.1-A3-2

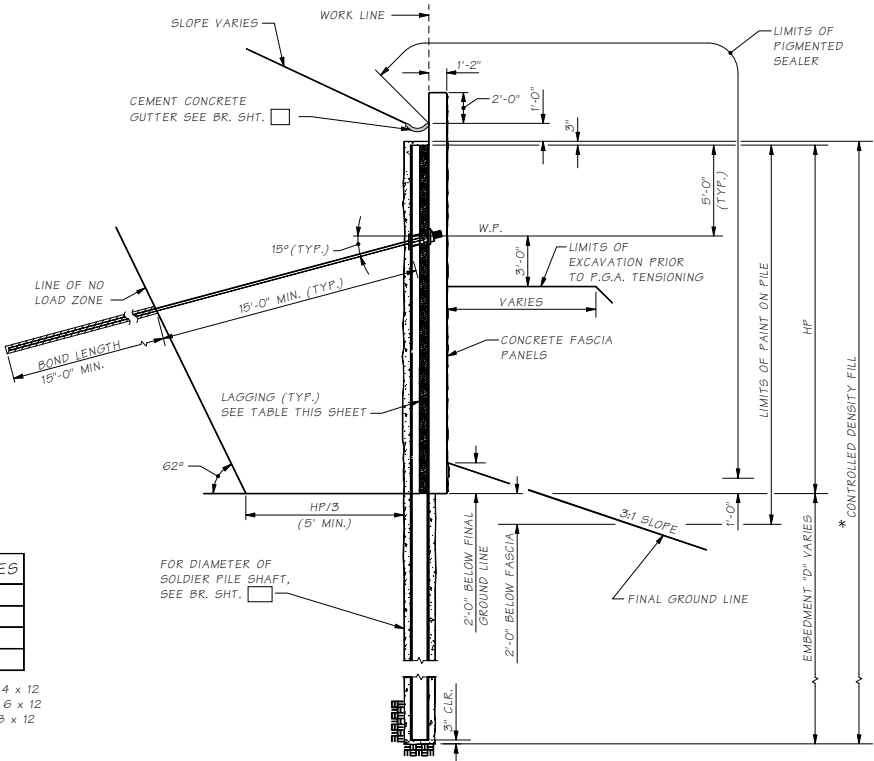
Bridge Design Engr.	M:\STANDARD\G\Wall\A\SOLDIER TIEBACK DETAILS A.MAN	WORK NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor		10	WASH.			
Designed By		JOB NUMBER				
Checked By						
Bridge Projects Engr.						
Prelim Plan By						
Architect/Spec'let	DATE	REVISION	BY	APPROD		

BRIDGE
AND
STRUCTURES
OFFICE



SOLDIER PILE/TIEBACK WALL
DETAILS 1 OF 2

DESIGN SHEET NO.
SHEET
OF
SHEETS



*TIMBER LAGGING SIZES	
*DEPTH (FT.)	*SIZE
0 - 9	4 x
9 - 18	6 x
18 - 30	8 x

4 x - OPTIONAL 4 x 8, 4 x 10 OR 4 x 12
6 x - OPTIONAL 6 x 8, 6 x 10 OR 6 x 12
8 x - OPTIONAL 8 x 8, 8 x 10 OR 8 x 12

Notes to Designer:

† Depths and sizes shown are for example only. Fill in the table according to the earth pressure diagram and recommendations from the Geotechnical Services Branch, based on LRFD timber design for permanent lagging.

µ Determine, if possible, the length of time that the wall lagging will be used as the primary structural member in the transverse direction before a permanent wall fascia is applied.

For walls with P.G.A. use a section size with a flange width bigger than or equal to HP12x53 or W12x65.

For walls without concrete fascia panels:

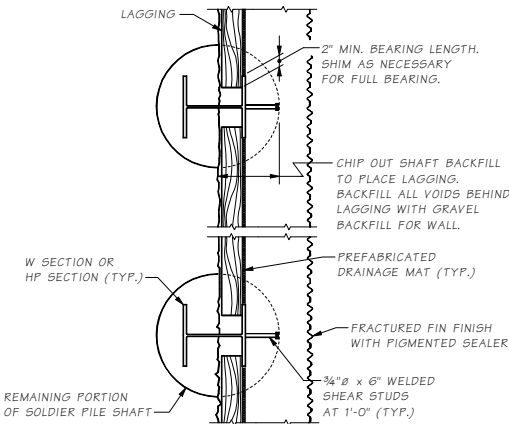
1. Hem-fir timber lagging shall not be used.
2. Douglas fir-larch, grade no. 2 or better, treated in accordance with section 9-09.3(1), shall be used and shall be specified in the plan sheets and Special Provisions.

TYPICAL SECTION

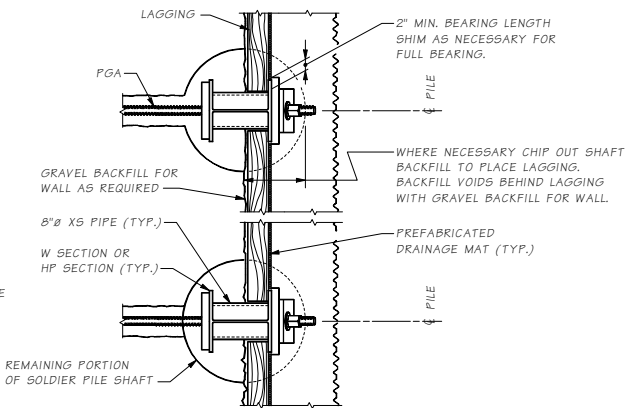
SHOWN FOR SOLDIER PILE WITH P.G.A.
SIMILAR FOR SOLDIER PILE WITHOUT P.G.A.
P.G.A.= PERMANENT GROUND ANCHOR

* USE CONTROL DENSITY FILL WHEN PLACED IN THE DRY. USE LEAN PUMPABLE CONCRETE WHEN PLACED IN THE WET.

LAGGING IN SERVICE
36 MONTHS OR LONGER



PLAN - SOLDIER PILE
WALL WITHOUT P. G. A.



PLAN - SOLDIER PILE
WALL WITH P. G. A.

SR JOB NO. SHEET
8.1-A3-3

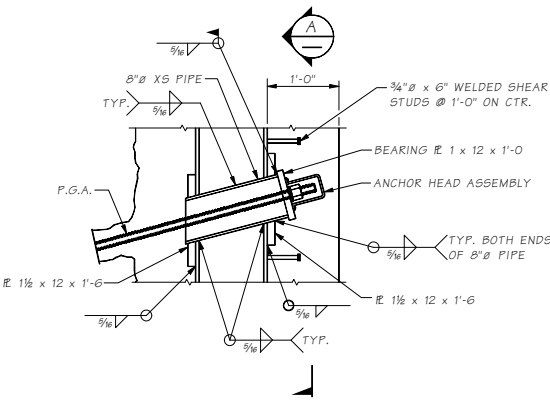
Bridge Design Engr.	M:\STANDARD\Walls\GOLDIER TIEBACK DETAILS B.MAN	WORK NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor		10	WASH.			
Designed By						
Checked By						
Detailed By						
Bridge Projects Engr.			JOB NUMBER			
Prelim Plan By						
Architect/Specialist	DATE	REVISION	BY	APPD		

BRIDGE
AND
STRUCTURES
OFFICE

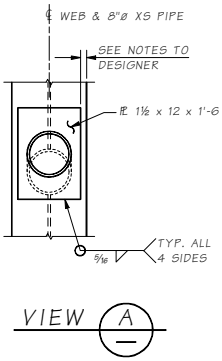


SOLDIER PILE/TIEBACK WALL
DETAILS 1 OF 2

REUSE SHEET NO.
SHEET
OF
SHEETS



ELEVATION - SOLDIER PILE
WITH P.G.A. THRU WEB



- Notes to Designer:
1. Plates must be checked for size and welds. Plates are used to replace flange steel removed for pipe installation.
 2. Weld must be checked along web to pipe and plate to flange. welds must be capable of transferring FGA loads and flexural loads.

SR JOB NO. SHEET 8.1-A3-4

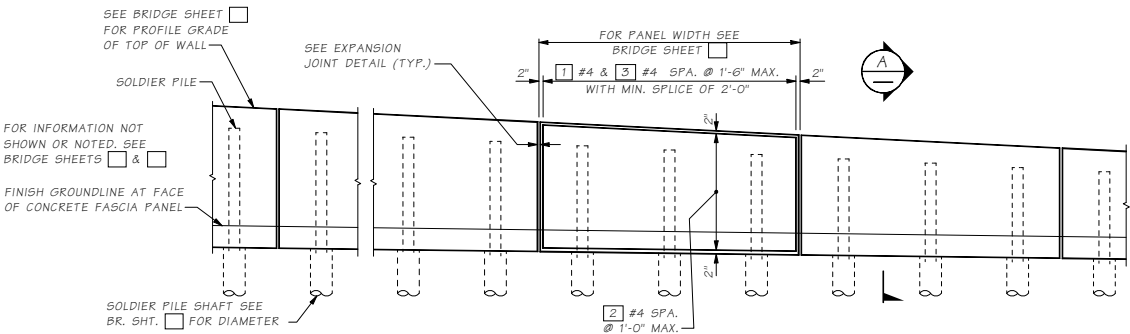
Bridge Design Engr.	M:\STANDARD\GWall\8\SOLDIER TIEBACK DETAILS 2.MAN	WORK NO.	10	STATE	WASH.	FED. AID PROJ. NO.		SHEET NO.		TOTAL SHEETS	
Supervisor											
Designed By											
Checked By											
Detailed By											
Bridge Projects Engr.											
Prelim Plan By											
Architect/Specialet											
DATE		REVISION		BY	APPD						

BRIDGE
AND
STRUCTURES
OFFICE

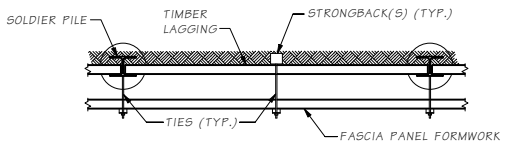
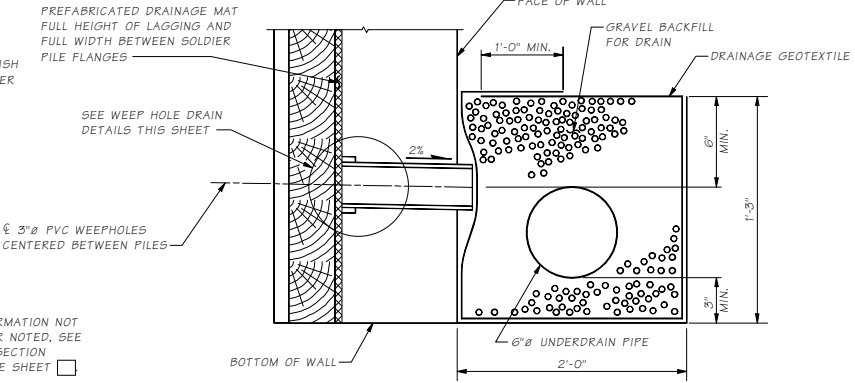
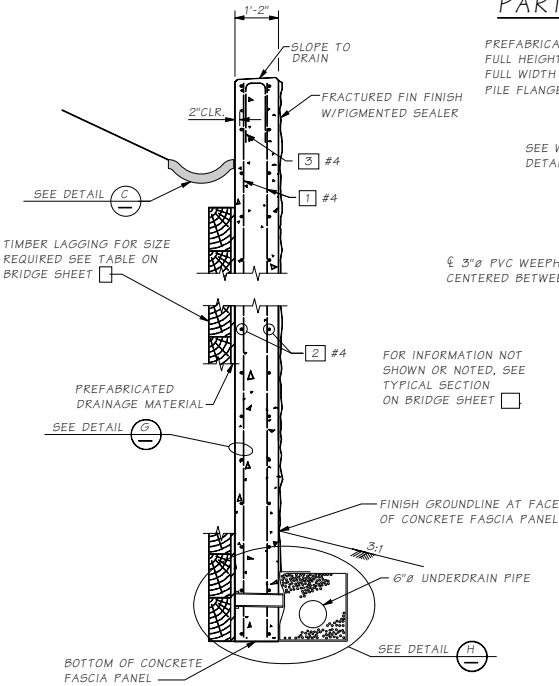


SOLDIER PILE/TIEBACK WALL
DETAILS 2 OF 2

BRIDGE SHEET NO.
SHEET
OF
SHEETS

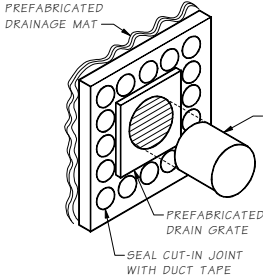


PARTIAL WALL ELEVATION



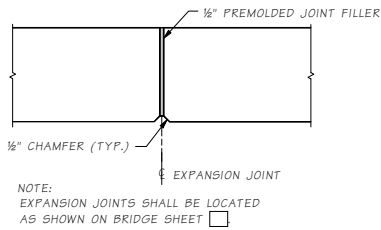
TYPICAL FASCIA PANEL FORMWORK

- SEE SPECIAL PROVISIONS FOR FASCIA PANEL FORMING.
- STRONGBACK(S) AND TIES SPACED AS REQUIRED FOR FORMING.

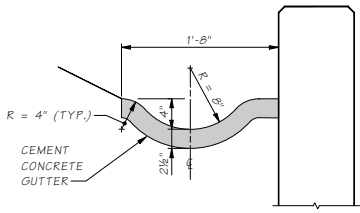


WEEP HOLE DRAIN DETAILS

DRAIN GRATE INSTALLATION SHALL NOT DISRUPT PREFABRICATED DRAINAGE MAT



EXPANSION JOINT DETAIL



DETAIL C

8-23-1-8
SR
JOB NO.
SHEET

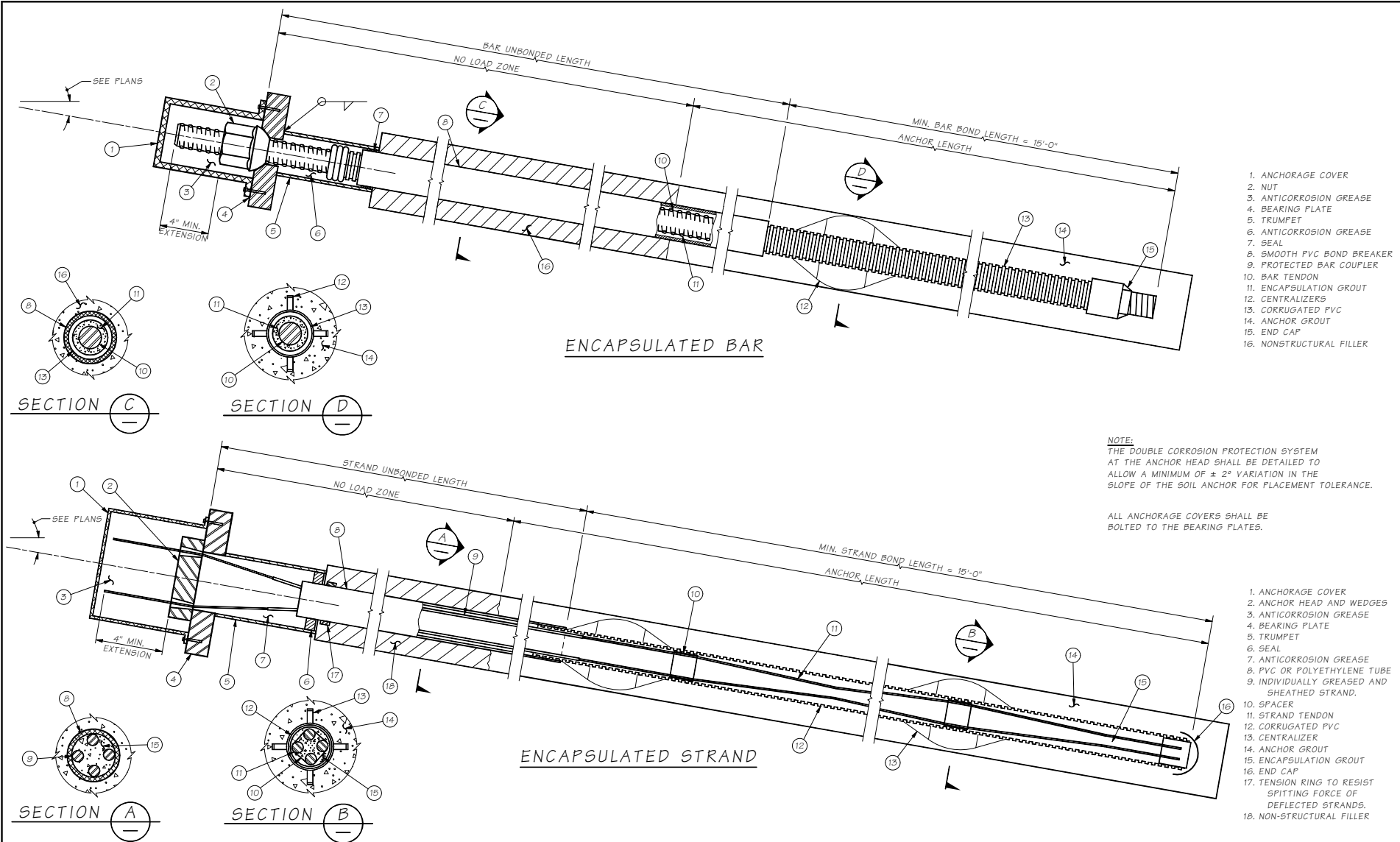
Bridge Design Engr.	M:\STANDARD\GWall\GOLDIER TIEBACK FASCIA.MAN	WORK NO.	10	STATE	WASH.	FED. AID PROJ. NO.		SHEET NO.		TOTAL SHEETS	
Supervisor											
Designed By											
Checked By											
Detailed By											
Bridge Projects Engr.											
Prelim Plan By											
Architect/Specialet											
DATE		REVISION		BY	APPD						

BRIDGE
AND
STRUCTURES
OFFICE



SOLDIER PILE/TIEBACK WALL
FASCIA PANEL DETAILS

BRIDGE SHEET NO.	
SHEET	
OF	
SHEETS	

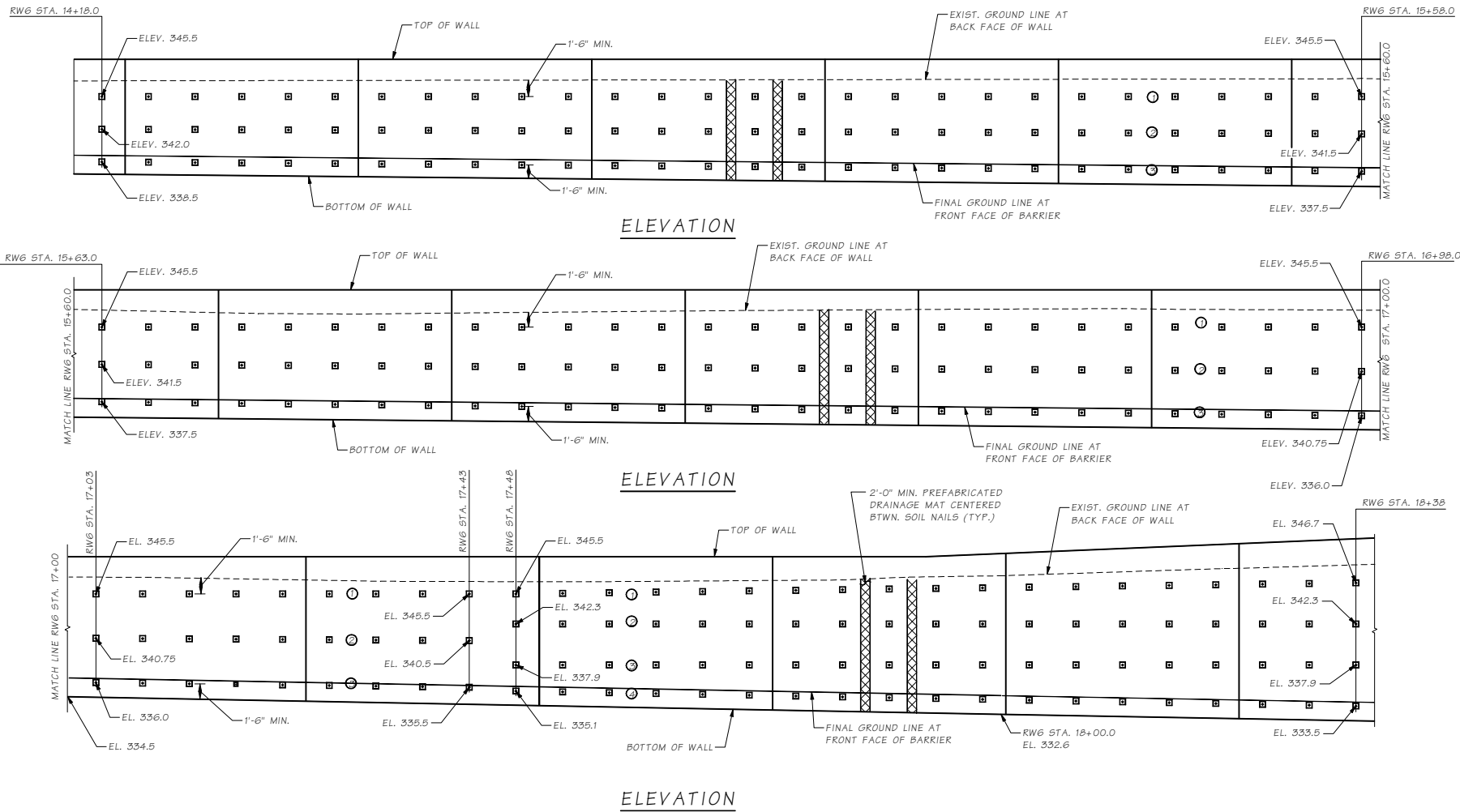


8.1-A3-6

SHEET
JOB NO.
SR

Bridge Design Engr.	M. STANDARD	Wall	PERMANENT GROUND ANCHOR	MAN
Supervisor				
Designed By				
Checked By				
Detailed By				
Bridge Projects Engr.				
Prelim Plan By				
Architect/Consultant				
DATE	REVISION	BY	APPROD	

BRIDGE AND STRUCTURES OFFICE		SOLDIER PILE/TIEBACK WALL PERMANENT GROUND ANCHOR DETAILS	DESIGN SHEET NO.
			SHEET
			OF SHEETS



SR JOB NO. SHEET 8.1-A4-1

Bridge Design Engr.	M:\STANDARD\Wall\SOIL NAIL ELEVATION.MAN	BRIDGE NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor		10	WASH.			
Designed By						
Checked By						
Detailer By						
Bridge Projects Engr.						
Prelim Plan By						
Architect/Spec'let						
DATE	REVISION	BY	APPD			

BRIDGE AND STRUCTURES OFFICE

Washington State Department of Transportation

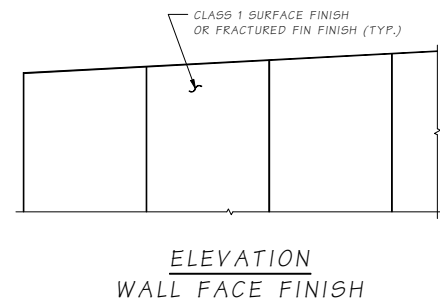
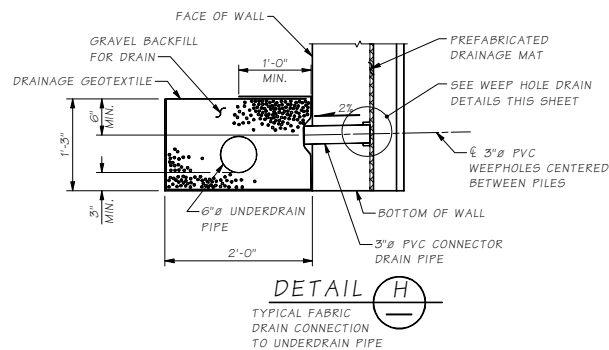
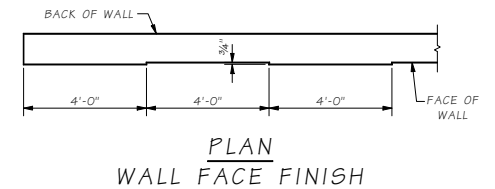
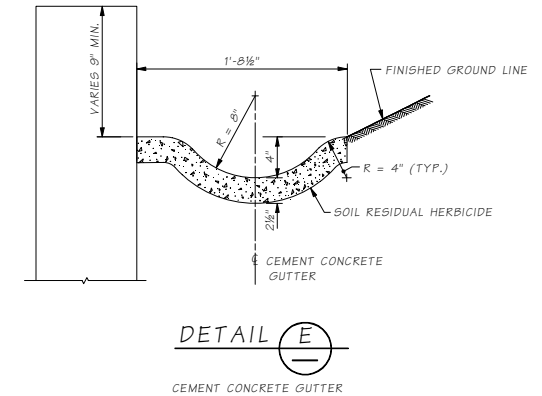
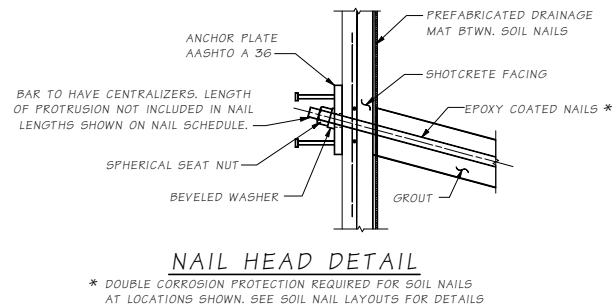
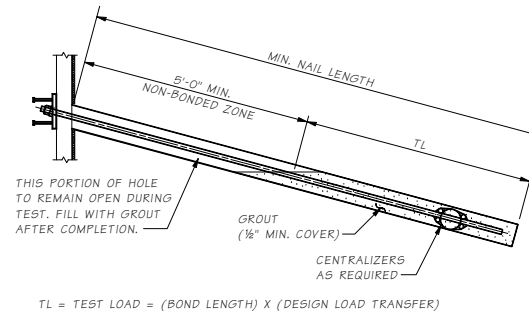
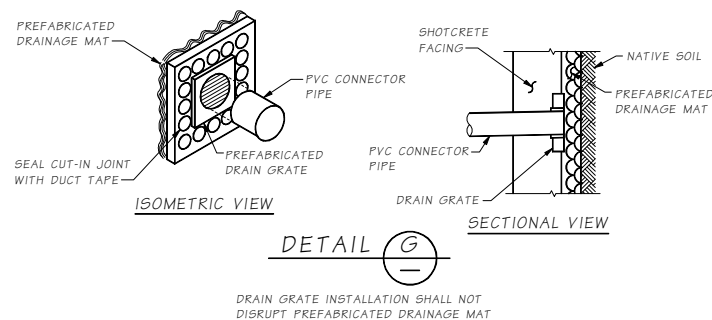
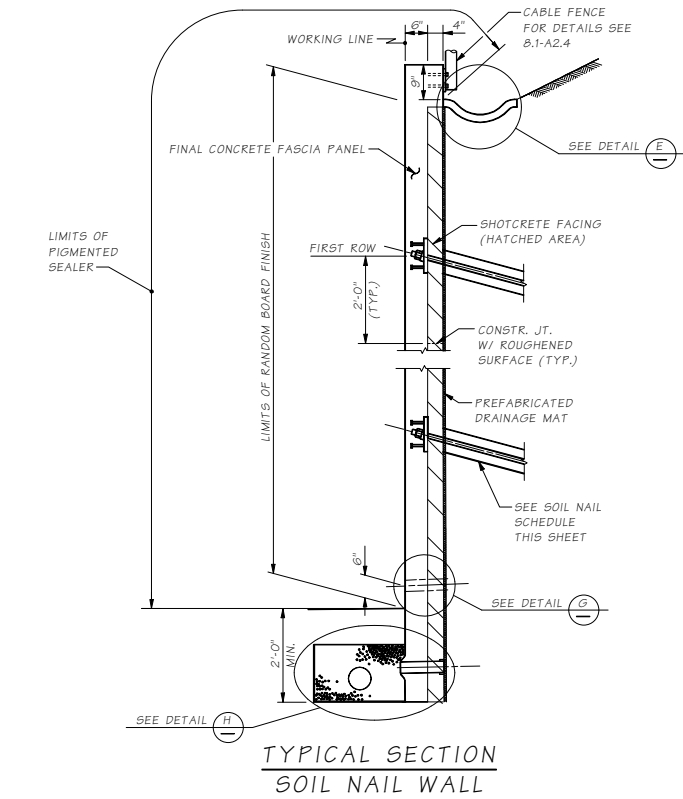
SOIL NAIL LAYOUT

BRIDGE SHEET NO.

SHEET

OF

SHEETS



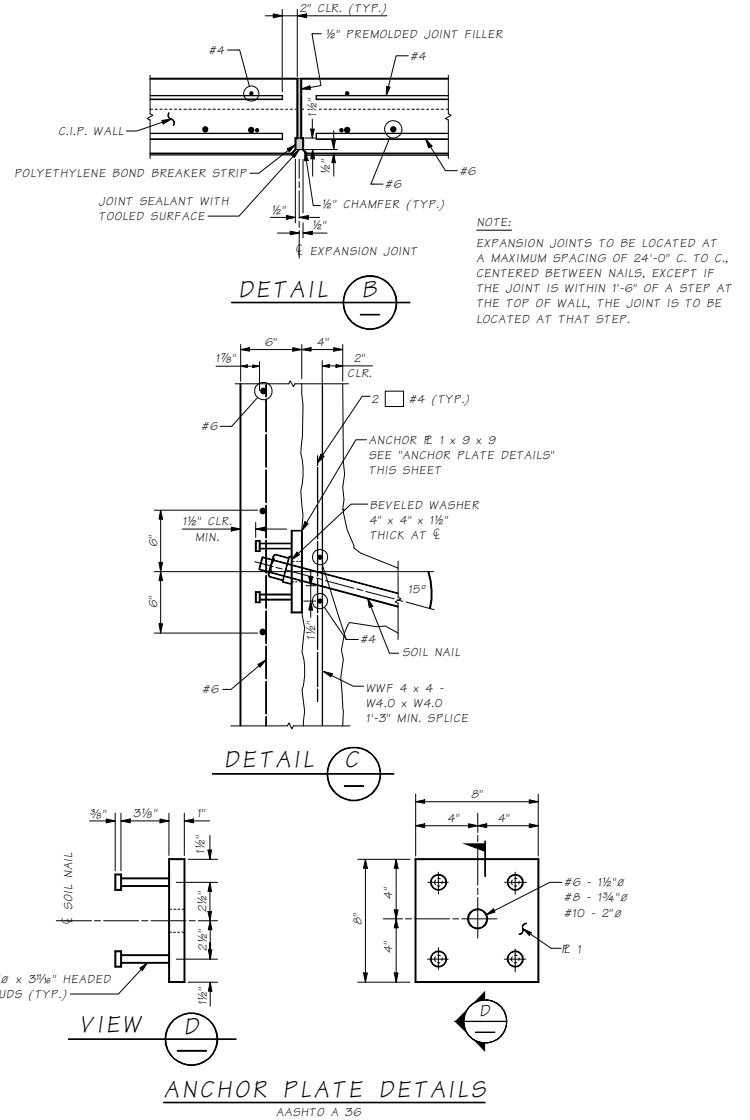
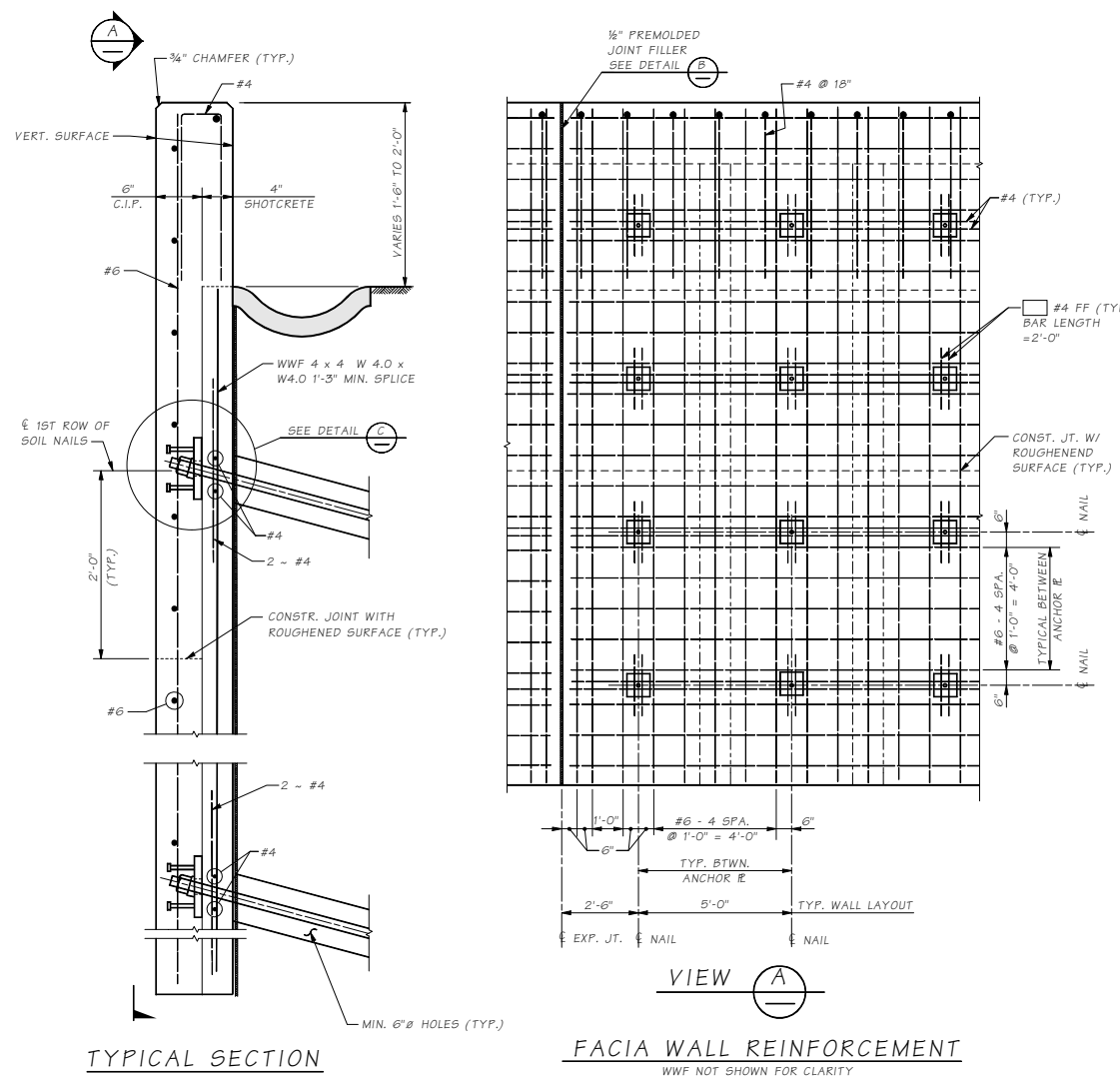
Bridge Design Engr.	M:1STANDARD WALL@SOIL NAIL TYP. SECT.MAN	DESIGN NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor		10	WASH.			
Designed By						
Checked By						
Detailed By						
Bridge Projects Engr.						
Prelim Plan By						
Architect/Spec'let						
DATE	REVISION	BY	APPD			

BRIDGE
AND
STRUCTURES
OFFICE



SOIL NAIL WALL SECTION

BRIDGE SHEET NO.
SHEET
OF
SHEETS



SR
JOB NO. 8-1-V-4-3
SHEET

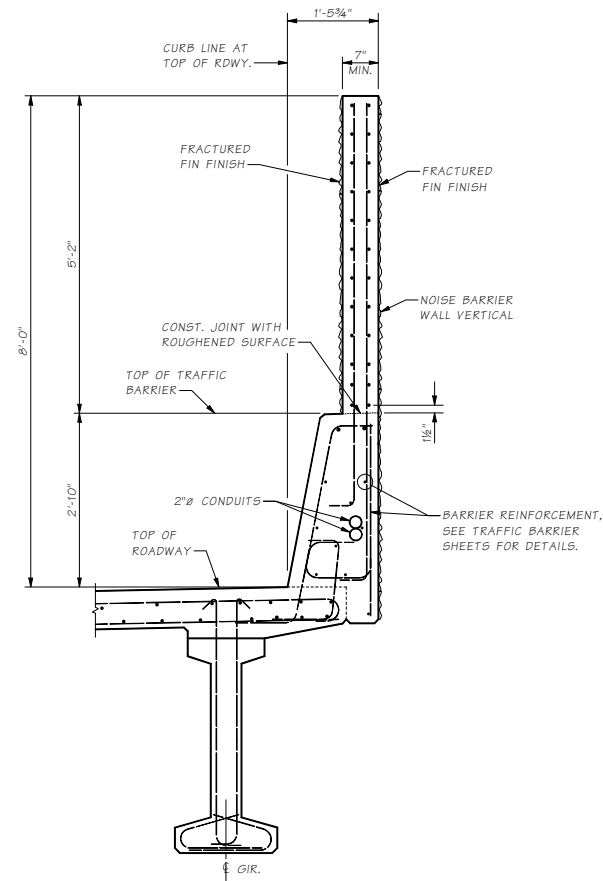
Bridge Design Engr.	M:\STANDARD\Wall\SOIL NAIL FASCIA.MAN	WORK NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor		10	WASH.			
Designed By						
Checked By						
Detailled By						
Bridge Projects Engr.						
Prelim Plan By						
Architect/Specialet						
DATE	REVISION	BY	APPD			

BRIDGE AND STRUCTURES OFFICE

Washington State Department of Transportation

SOIL NAIL WALL
FASCIA PANEL DETAILS


BRIDGE SHEET NO.
SHEET
OF
SHEETS

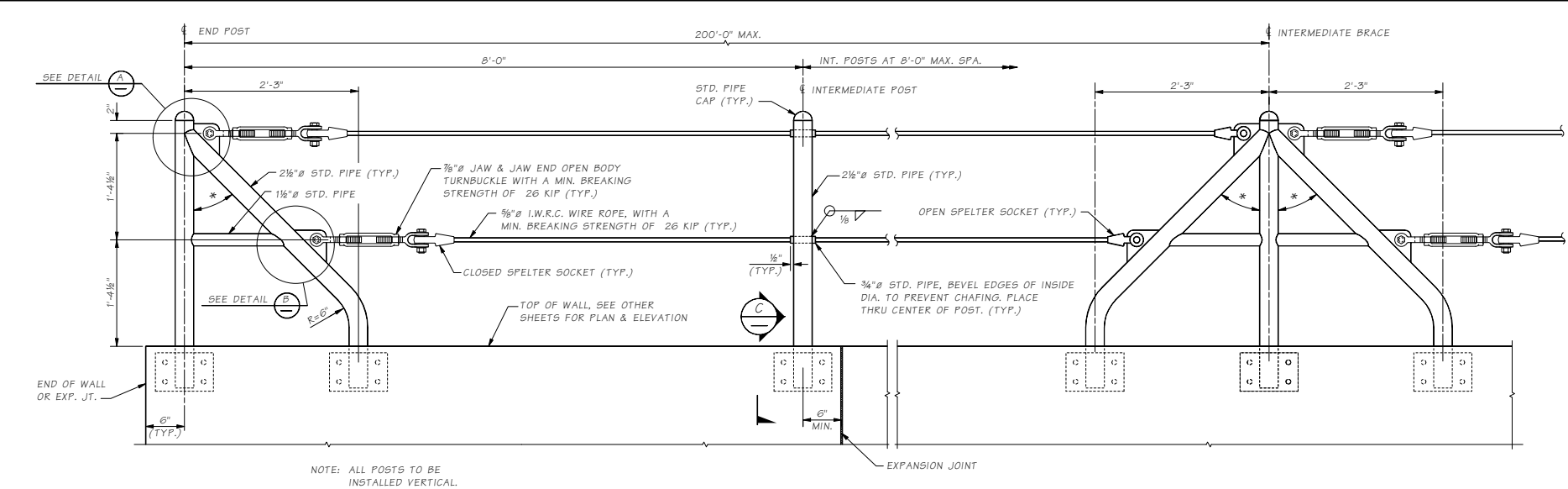
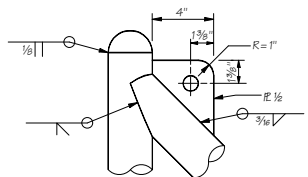


NOISE BARRIER WALL
ON BRIDGE

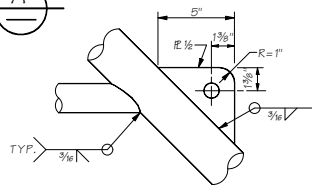
SR JOB NO. SHEET

8.1-A5-1

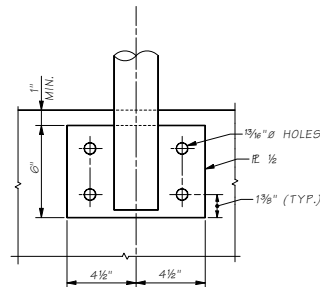
Bridge Design Engr.		M-1STANDARDSWall&NOISE BARRIER ON BRIDGE.MAN										<div><div>BRIDGE AND STRUCTURES OFFICE</div><div> Washington State Department of Transportation</div></div>										BRIDGE SHEET NO.1	
Supervisor																							
Designed By																							
Checked By																							
Detailed By																							
Bridge Projects Engr.																							
Prelim Plan By																							
Architect/Specialist		DATE		REVISION		BY		APPRO		<div>NOISE BARRIER ON BRIDGE</div>										SHEET OF			
												NOISE BARRIER ON BRIDGE										SHEETS	

ELEVATION - CABLE RAIL

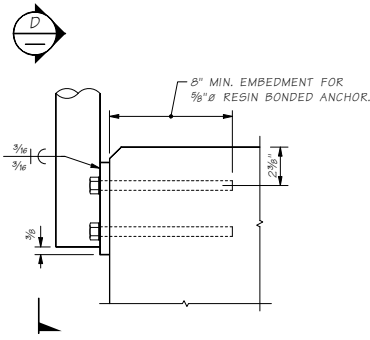
DETAIL A



DETAIL B



VIEW D



SECTION C

NOTES:

1. ALL PIPE SHALL BE STEEL PIPE ASTM A53 GRADE B.
2. ALL STEEL PLATE SHALL BE ASTM A 36.
3. ALL PARTS EXCEPT WIRE ROPE SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111 OR M232 AFTER FABRICATION.
4. SPELTER SOCKETS AND SOCKETTING PROCEDURE SHALL BE AS PER ROPE MANUFACTURER.
5. WIRE ROPE SHALL BE INSTALLED TO 0.4 KIP TENSION LEAVING 6" OF TAKE UP AVAILABLE IN THE TURNBUCKLE.
6. EACH CONTINUOUS LENGTH OF CABLE SHALL HAVE A TURNBUCKLE AT ONE END ONLY AND BE ANCHORED TO END POST WITH BRACE AT BOTH ENDS.
7. CENTER SUPPORT NOT TO BE INSTALLED ACROSS EXPANSION JOINT.
8. ALL POSTS TO BE INSTALLED VERTICAL.

Bridge Design Engr.		K151STANDARDSWallaCABLE RAILMAN										
Supervisor							BOOK NO.	STATE		FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Designed By							10	WASH.				
Checked By												
Detailed By												
Bridge Projects Engr.							JOB NUMBER					
Prelim Plan By												
Architect/Specialist												
	DATE		REVISION			BY	APPD					

BRIDGE
AND
STRUCTURES
OFFICE

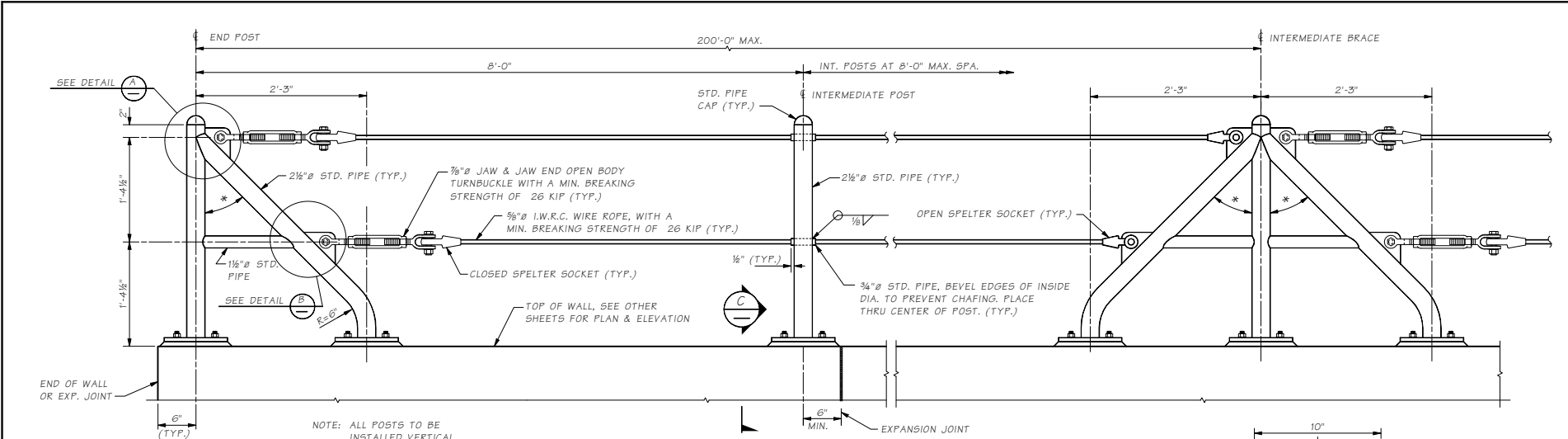


**Washington State
Department of Transportation**

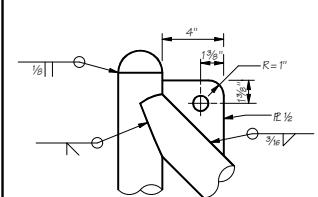
CABLE FENCE - SIDE MOUNT

BRIDGE SHEET NO.	
SHEET	
OF	
SHEETS	

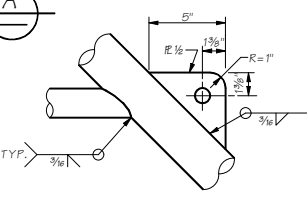
8.1-A6-1



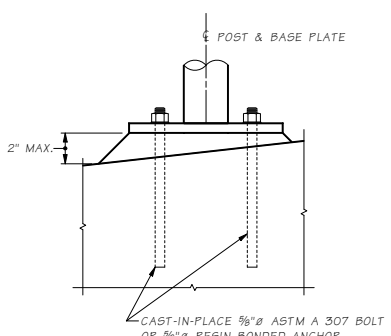
ELEVATION - CABLE RAIL



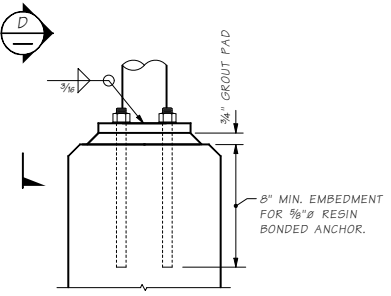
DETAIL A



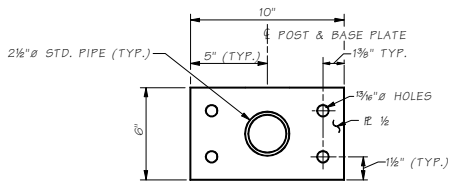
DETAIL B



VIEW D



SECTION C



BASE PLATE DETAIL

NOTES:

1. ALL PIPE SHALL BE STEEL PIPE ASTM A53 GRADE B.
2. ALL STEEL PLATE SHALL BE ASTM A 36.
3. ALL PARTS EXCEPT WIRE ROPE SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH AASHTO M111 OR M232 AFTER FABRICATION.
4. SPelter SOCKETS AND SOCKETING PROCEDURE SHALL BE AS PER ROPE MANUFACTURER.
5. WIRE ROPE SHALL BE INSTALLED TO 400 LBS TENSION LEAVING A TAKE UP OF 6" STILL AVAILABLE IN THE TURNBUCKLE.
6. EACH CONTINUOUS LENGTH OF CABLE SHALL HAVE A TURNBUCKLE AT ONE END ONLY AND BE ANCHORED TO END POST WITH BRACE AT BOTH ENDS.
7. INTERMEDIATE POSTS AND BRACES SHALL NOT TO BE INSTALLED ACROSS EXPANSION JOINT.
8. ALL POSTS TO BE INSTALLED PERPENDICULAR TO TOP OF WALL.

8.1-A6-2

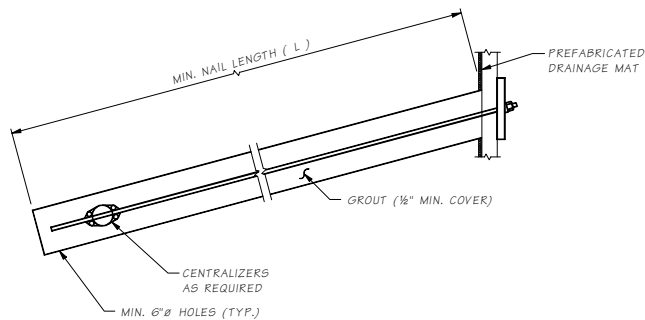
Bridge Design Engr.	M:\STANDARDS\Wall\6\CABLE RAILING TOP MOUNTED BASE.MAN	WORK NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor		10	WASH.			
Designed By						
Checked By						
Bridge Projects Engr.						
Prelim Plan By						
Architect/Specialet						
DATE	REVISION	BY	APPD			

BRIDGE AND STRUCTURES OFFICE

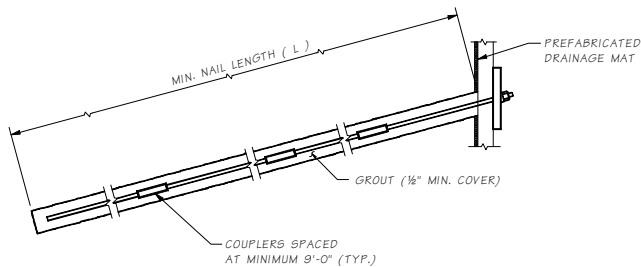


CABLE FENCE - TOP MOUNT

BRIDGE SHEET NO.
SHEET
OF
SHEETS



NAIL DETAIL
SOLID BAR OPTION



NAIL DETAIL
SELF-DRILLING HOLLOW BAR OPTION

	NAIL SCHEDULE				
	L	α	S	BAR #	DLT
SOLID BARS					
SELF-DRILLING HOLLOW BARS					

NOTES:

1. NAIL ELEVATIONS AT FACE OF SHOTCRETE FACING SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
2. THE SOIL NAILS SHALL BE BLACK STEEL REINFORING BARS. SELF-DRILLING HOLLOW BAR ANCHORS WITH A MINIMUM CAPACITY OF 45 KIPS MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.

LEGEND

L = MINIMUM NAIL LENGTH (FT.)
 α = NAIL DECLINATION (DEG.)
S = HORIZONTAL SPACING OF NAILS
BAR # = MIN. STEEL BAR SIZE
DLT = DESIGN LOAD TRANSFER (K/FT.)

Bridge Design Engr.	Jugesh Kapur	M:\STANDARD\G\Wall\SOIL NAIL SELF DRILLING.MAN	WORK NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
Supervisor	Sup.		10	WASH.			
Designed By	Designer	Date	JOB NUMBER				
Checked By	Checker	Date					
Detailed By	Detailer	Date					
Bridge Projects Engr.							
Prelim Plan By							
Architect/Specifier	DATE	REVISION	BY	APPD			

BRIDGE
AND
STRUCTURES
OFFICE



Project Title 1
Project Title 2
Project Title 3
Structure Name

Sheet Title

BRIDGE SHEET NO.	1
SHEET	
OF	
SHEETS	